

Name: _____ Blk: _____

Science 9 Practice Final

All Multiple Choice!

Circle the letter that **best** completes the statement or answers the question.

1. Which of the following statements is a direct visual observation?
(a) The candle is heavy. (c) **The candle is lit.**
(b) The flame is hot. (d) The wax is soft.
2. Janine has been experimenting with water rockets. She can vary the amount of water in the rocket and the launching angle of the rocket. She can also change the weight of the rocket by adding sand to the nose cone. She wonders which factors will affect the height to which the rocket will rise. Which of the following is a hypothesis that she could test?
(a) Rockets using warm water will rise higher than rockets with cold water.
(b) Rockets using five tail fins will rise higher than rockets with three tail fins.
(c) Rockets with a pointed nose cone will rise higher than rockets with a rounded nose cone.
(d) **Rockets using more water will rise higher than rockets with less water.**
3. Cell division is used for
(a) reproduction (b) growth
(c) repair (d) **all of the above**
4. Mitosis proceeds through a series of stages. These, in order, are
(a) interphase, metaphase, prophase, telophase
(b) **prophase, metaphase, anaphase, telophase**
(c) prophase, anaphase, metaphase, telophase
(d) metaphase, telekinesis, prophase, cytokinesis
5. The stage of mitosis during which the cytoplasm is divided into two parts is called
(a) **cytokinesis** (b) telophase
(c) interphase (d) binary fission
6. Some animals are able to replace lost limbs or other body parts. This ability is called
(a) fragmentation (b) vegetative reproduction
(c) budding (d) **regeneration**

7. Which of the following statements about DNA is **not** true?
- (a) The DNA molecule can make a copy of itself.
 - (b) The DNA molecule looks like a twisted ladder (double helix).
 - (c) **In DNA, adenine is always paired with guanine.**
 - (d) There are only four nitrogenous bases available to form DNA.
8. Meiosis is used for
- (a) **reproduction**
 - (b) growth
 - (c) repair
 - (d) all of the above
9. A fertilized egg is also known as
- (a) a gamete
 - (b) an embryo
 - (c) a spore
 - (d) **a zygote**
10. Pollen is transferred from one flower to the next by
- (a) swimming
 - (b) insects
 - (c) wind
 - (d) **both (b) and (c)**
11. Since prehistoric times, humans have improved domesticated animals by the process of
- (a) genetic engineering
 - (b) **selective breeding**
 - (c) recombinant DNA technology
 - (d) evolution
12. Mitosis is **not** used for
- (a) growth
 - (b) repairing damaged tissues
 - (c) **sexual reproduction**
 - (d) asexual reproduction
13. In a DNA molecule, thymine is always found paired with
- (a) **adenine**
 - (b) cytosine
 - (c) guanine
 - (d) thymine
14. In the cell, proteins are made by
- (a) chromosomes
 - (b) **ribosomes**
 - (c) RNA
 - (d) genes
15. Mushrooms reproduce asexually by means of
- (a) binary fission
 - (b) budding
 - (c) vegetative reproduction
 - (d) **spores**

16. Which of the following is considered an advantage of sexual reproduction?
- (a) Two parents are needed. (b) Fewer offspring are produced.
(c) **Offspring are genetically different** (d) Reproduction is usually a slow process.
17. Which of the following is not a physical property?
- (a) state (b) density (c) conductivity (d) **flammability**
18. Which of the following geological processes are chemically created?
- (a) erosion of a riverbank (c) breaking of rock by ice
(b) flow of molten lava (d) **dissolving of limestone cave**
19. Which property of plastic makes it useful as a handle for pots and pans?
- (a) is brittle (c) does not conduct electricity well
(b) **conducts heat poorly** (d) has high density
20. A particle is vibrating, it is able to slip by other particles, and it moves downward. The particle must be a part of a
- (a) solid (b) **liquid** (c) plasma (d) gas
21. Snow and hail are formed by which two different processes?
- (a) deposition and solidification (c) condensation and evaporation
(b) **deposition and evaporation** (d) melting and solidification
22. Which of the following is not a property of metals?
- (a) shiny lustre (c) very dense
(b) good heat conductivity (d) **prevents electrical flow**
23. Which of the groups of elements is most important in the manufacture of computers and microprocessors?
- (a) metals (b) **metalloids** (c) non-metals (d) all are used
24. What are the elements and their proportions contained in acetaminophen, if its formula is $C_8H_9NO_2$
- (a) 9 parts carbon, 8 parts hydrogen, 1 part nitrogen, 2 parts oxygen
(b) 8 parts carbon, 9 parts hydrogen, 2 parts nitrogen, 1 part oxygen
(c) 8 parts carbon, 9 parts hydrogen, 12 parts nickel, 2 parts oxygen
(d) **8 parts carbon, 9 parts hydrogen, 1 part nitrogen, 2 parts oxygen**

25. Which of the following is a noble gas?

- (a) **xenon** (b) carbon dioxide (c) hydrogen (d) oxygen

26. A pure substance that cannot be split up by chemical reaction is called

- (a) a mixture (b) **an element** (c) a compound (d) a solution

27. An ion of a certain element has 12 protons, 15 neutrons, and 10 electrons. The ion charge of the element is therefore

- (a) **2+** (b) 3+ (c) 2- (d) 3-

28. Elements in the last column of the Periodic Table do not readily react because

- (a) They do not have enough electrons to react.
(b) Only elements with a negative ion charge are beside them.
(c) They have a full outer electron shell as ions.
(d) **They have a full outer electron shell as atoms.**

29. Which of the following rows represents a correct number of protons, electrons, and neutrons for an ion?

	Number of protons	Number of neutrons	Number of electrons
(a)	13	26	16
(b)	26	13	39
(c)	13	13	10
(d)	13	13	13

30. The theory that the atom has a nucleus containing most of the mass and all of the positive charge was first proposed by

- (a) **Rutherford** (b) Bohr (c) Thomson (d) Dalton

31. Bromine is a member of this chemical family:

- (a) **halogens** (c) alkaline earth metals
(b) alkali metals (d) noble gases

32. A compound contains 3 nitrate ions for every 1 aluminum ion. The chemical formula is

- (a) $3\text{NO}_3\text{Al}$ (c) Al_3NO_3
(b) $(\text{NO}_3)_3\text{Al}$ (d) **$\text{Al}(\text{NO}_3)_3$**

33. A metal has only one possible ion charge. Its ion is called a _____ metal ion.

- (a) multivalent
- (b) **monovalent**
- (c) multicharged
- (d) singly charge

34. One possible ion of tungsten has an ion charge of 6+. The name of this ion is

- (a) tungsten(6)
- (b) tungsten-6
- (c) **tungsten(VI)**
- (d) hexatungstide

35. The members of the alkali metals all share these properties:

- (a) hard, react with water to form hydrogen gas, conduct electricity
- (b) **soft, react with water to form hydrogen gas, conduct electricity**
- (c) unreactive metals, bright colours, toxic
- (d) reactive metals, bright colours, toxic

36. The chemical formula for sodium carbonate is

- (a) NaCO_3
- (b) $\text{Na}(\text{CO}_3)_2$
- (c) **Na_2CO_3**
- (d) $\text{Na}_2(\text{CO}_3)$

37. The compound KNO_3 is called

- (a) krypton nitroxide
- (b) potassium nitrogen oxide
- (c) potassium nitrogen oxygen
- (d) **potassium nitrate**

38. If an electron is removed from a neutral atom, what does the atom become?

- (a) a neutral ion
- (b) **a positive ion**
- (c) a negative ion
- (d) a new element

39. An object is charged by bringing another object that has been charged close to, but without touching, the first object. What type of charging is this?

- (a) **Induction**
- (b) reduction
- (c) **conduction**
- (d) convection

40. Which of the following materials will an electric current move through easily?

- (a) rubber strip
- (b) **copper wire**
- (c) vinyl plastic
- (d) acetate plastic

- (a) 4.0 A
(b) 1.0 A
(c) 3.0 A
(d) **2.0 A**

47. Two $4.0\ \Omega$ resistors are connected in parallel in a circuit. The total resistance of the circuit will be

- (a) **less than $4.0\ \Omega$.**
- (b) equal to zero.
- (c) greater than $4.0\ \Omega$.
- (d) equal to $4.0\ \Omega$.

48. How does conventional current compare to electron flow?

- (a) Conventional current moves in the same direction of electron flow
- (b) Conventional current moves back and forth, while electron flow is only in one direction
- (c) **Conventional current moves in the opposite direction of electron flow**
- (d) Conventional current moves only in one direction, while electron flow moves back and forth

49. Which unit is used by electrical companies to express large amounts of electrical energy?

- (a) Kilojoule
- (b) Kilowatt
- (c) **Kilowatt-hour**
- (d) Kilojoule-hour

50. These tides occur when the Sun and the Moon form perpendicular lines with respect to Earth.

- (a) weak
- (b) neap
- (c) spring
- (d) **(a) and (b)**

51. The fact that most planets rotate in the same direction as their orbital planes is evidence for the _____ theory.

- (a) kinetic molecular
- (b) Big Splash
- (c) **rotating nebula**
- (d) Big Bang

52. Modern support for the Big Bang theory states that

- (a) The universe is about 15 billion years old
- (b) Background radiation can be detected as radio waves
- (c) The background radiation shows fluctuations in temperature and density that are believed to be the beginnings of all galaxies.
- (d) **All of the above are correct.**

53. Which of the following statements about stars is false?

- (a) Stars are made of gases
- (b) Stars radiate energy
- (c) Stars are the most common celestial bodies in the universe
- (d) **Once a star is made, it will exist until the end of the universe**

54. The light a star produces can reveal many of its characteristics. Which of the following is not revealed by a star's light spectrum?

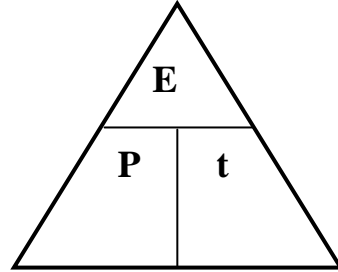
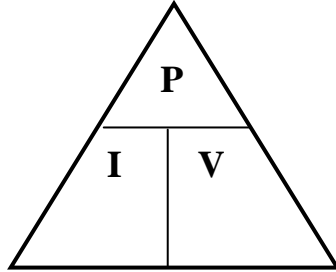
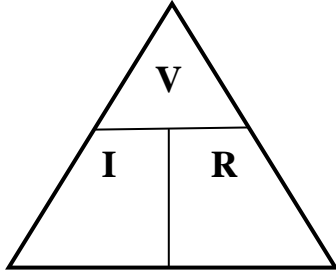
(a) Temperature

(b) Brightness

(c) Direction of travel

(d) **Rotation**

Science 9 Formula Sheet



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